molecule significantly impacts the quality of the dewaxed oil product. For example, isomerizing a normal C_{24} paraffin, tetracosane, using a large pore zeolite catalyst conventionally taught for wax isomerization, generally produces a significant quantity of triply branched paraffin isomers. Even medium pore catalysts taught for wax isomerization, when isomerizing a waxy feed to a low pour point, produces significant quantities of the triply branched isomers. While not wishing to be bound by theory, it is believed that normal paraffins are first converted during wax isomerization to a singly branched paraffin having a methyl (--CH_3) or ethyl (--C_2H_5), branch near the end of the paraffin backbone. Additional isomerization reactions move the branch toward the center of the paraffin molecule and/or add a second branch to the paraffin molecule. Each of these two isomerization reaction steps reduces pour point.

However, conventional single stage and/or large pore zeolite dewaxing processes are unselective for forming branches. These unselective catalysts produce triply (or even more highly) branched isomers along with the singly and doubly branched isomers before reaching the target pour point. These highly branched molecules have an increased tendency to crack and have a lower viscosity index than do singly or doubly branched paraffins. Furthermore, the addition of a third branch to a doubly branched paraffin often results in relatively little additional pour point reduction. Thus, these conventional processes are prevented from producing lubes with the desired viscosity index and pour point properties.

In the present process, normal paraffins are isomerized at high selectivity to singly and doubly branched paraffins using a process which produces few triply branched paraffins. The shape selective catalyst of the present invention, comprising a 1-D intermediate pore size molecular sieve, restricts the amount of triply branched paraffins which are formed in the isomerization of a waxy feed, while producing a product having an intermediate pour point. The remaining wax is removed in a solvent dewaxing step to produce a lubricating oil base stock with a very low pour point and a

18. The process according to claim 17 wherein the catalyst contains from about 0.2% to about 1% by weight of the hydrogenation component.

19. The process of claim 1 wherein the catalyst comprising the molecular sieve has sufficient isomerization selectivity such that, when contacting a n-C_{24} feed at a total pressure of 1000 psig (6.99 MPa), hydrogen flow equivalent to 6.7 MSCF/bbl (1010 std liters H_2/kg oil), and a feed rate equivalent to 0.6 hr^{-1} LHSV with the catalyst, to produce a 316°C+ dewaxed product having a pour point of about +20°C and solvent dewaxing the dewaxed product to a pour point of −15°C or below, an isomerized product having a branching index of less than about 1.75 is formed.

20. A process for preparing an oil suitable for use as a lubricating oil base stock comprising:

a) contacting a waxy feed over a catalyst comprising a molecular sieve having 1-D pores with a pore diameter of between about 5.0 Å and about 7.0 Å, and at least one Group VIII metal, at a pressure of from about 15 psig (103 kPa) to about 2500 psig (13.8 MPa) to produce an isomerized oil having a pour point of greater than about 0°C; and

b) solvent dewaxing the isomerized oil to produce a lubricating oil base stock having a pour point of less than or equal to −10°C, a viscosity index of greater than about 140 and a viscosity, measured at 100°C, of about 3 cSt or less.

21. The process according to Claim 20 wherein the viscosity of the lubricating oil base stock, measured at 100°C, is less than about 3 cSt and the pour point is less than or equal to -20°C.

22. The process according to Claim 20 wherein the viscosity index of the lubricating oil base stock is greater than 150 and the pour point is less than −20°C.

23. The process according to Claim 20 wherein the molecular sieve is SSZ-32.